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Wildlife and Related Natural Resources

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MILLS E. GODWIN, JR., GOVERNOR

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Editorial

THE MANAGEMENT OF LIVING NATURAL RESOURCES

Man's existence is jeopardized by his own increasing population. The continued well-being of man, and earth's other living natural resources, is dependent upon a healthy environment maintained through the skilled management of our resources. As human populations increase, wild plant and animal habitats usually decrease. Many people presume that all wild habitats are untouched by man and still remain as nature would have them. Actually, few natural areas have escaped the influence of man or his products of pollution. Often these influences have disrupted natural areas, thus requiring the need for scientific management of these areas and their associated living resources.

A "hands-off," non-manipulative policy for plant and animal resources eventually could result in reestablishing naturally-functioning plant and animal communities as wild areas, if man's ever-present impacts could be eliminated. In such areas the actions of nature would dominate and low priority would be given to the material wants of man. Such areas have been and are being established where practicable.

Only limited amounts of land can be devoted to wild areas because of the demands of our growing human population. Land is required for housing, crop, mineral and timber production, manufacture and sale of goods, intensive recreation and other necessary and desirable purposes. Plant and animal communities associated with these more intensive land uses, although often highly productive, are usually unnatural in that they lack the diversity and stability of unaltered communities. It is on these altered lands that man can assist natural processes by applying sound land and water

management to provide habitat suitable for plants and animals which are forced to live in close association with man and his activities. Man also may enhance and optimize plant and animal populations at levels within the land's ability to support them through proven professional management practices.

The Wildlife Society recognizes the serious implications of man's ever-increasing worldwide demands for living space, food, shelter and other products. It also recognizes a need for a policy of continued, intensified and improved management for earth's living resources.

The policy of the Wildlife Society, as regards management of living natural resources, is to:

1. Support and strengthen scientific management as the rational instrument for maintaining, restoring and enhancing plant and animal resources for man's continued use and appreciation.

2. Encourage the development and dissemination of information to improve public understanding of the need for and the positive benefits from scientific management.

3. Encourage the retention or enhancement of habitat for native plants and animals on both public and private lands, mindful of the fact that plant and animal populations depend on the perpetuation of suitable habitat conditions under which they may live and reproduce.

4. Seek support for ethical restraints in the use of living natural resources.

5. Reaffirm our view that scientific management includes both the regulated harvest of the surplus of those species in plentiful supply, as well as the protection of those plant or animal species which are rare, threatened or in danger of extinction.

—Wildlife Society

Letters

THE TRUE SPORTSMAN

Many people of modern day life fail to realize what the acts of hunting and fishing really mean to a true sportsman. The definition of a true sportsman perhaps needs some explanation. He is not the man who goes into the woods with the blood-thirsty attitude of killing anything that gets in his way. He does not trespass on private land, or keep bass under the legal length limit. He does not follow the trout truck around and fish before the season enters. All of these things are public images

that many people have of the sportsman. The sad thing is that all must suffer for the careless few who have lost the true idea behind the outdoor life.

A true lover of the great outdoors which God so graciously gave us is the man who seeks solitude from the hush and rush of normal living. He is the man who gets just as big a thrill out of preparing for the hunt as he does in the actual killing of the game. He enjoys the smell of the woods on a brisk December morning or seeing the sun come up over the ridge. He loves the beautiful scenery in which his mind and body can drift and take him away from the

mechanical world. He loves to sit around the old campfire and tell of the one that got away. He will turn a trophy fish back because of the respectful way in which it fought. He is the parent who wants his children to grow up respecting Nature, by not abusing it.

Those who abuse the right to hunt and fish may in time be the ones who will doom this outlet we have to get away from our mechanical world. My hope is that people will open their eyes and realize that being a good sportsman is one of the best ways to be a good citizen.

Richard L. Hardy
Woodstock



By HOWARD L. FERGUSON
Blacksburg

A beaver stick lodge and dam.

The beaver was one of the first casualties of man's greed and ignorance in the New World. Because of over-trapping, the species was virtually extinct in Virginia by 1900. At present, due to the reintroduction of the beaver by the Virginia Game Commission along with rigid protective laws, beaver are, once again, fairly common in Virginia.

Beavers of Virginia are a dark-brown animal with a scaly paddle-shaped tail. They are heavily built with rounded bodies, powerful chisel-shaped front teeth, short legs and webbed hind feet. Front feet are equipped with strong claws for digging and used for holding food and carrying sticks, mud, and stones for building lodges and dams. Beaver are covered with long coarse guard hairs overlying short, dense and silky underfur; the underfur is the principal reason for the high value of beaver pelts. In fact, the underfur is so dense that no water ever reaches the skin.

The sexes are similar in size, weight and color with adult beaver in Virginia usually weighing from 30 to 50 pounds, some weighing as much as 70 pounds. Average length varies from three to four feet.

Originally a terrestrial animal, the beaver has evolved adaptations suitable to a semiaquatic environment. Eyes and ears have developed special muscles which allow them to close when the animal is under water. They also have large fur-covered flaps of skin which constrict behind the front incisors to prevent water from entering the mouth while cutting or carrying branches under-

water. A third adaptation is the split pincer-like nail on the second toe of each hind foot. The beaver uses this split nail to groom itself and to apply to the guard hairs a waterproofing oil secreted from two small glands located near the tail.

Below the two smaller oil glands are the well-known

Originally a terrestrial animal, the beaver has evolved adaptations suitable to a semiaquatic environment.



Biologists and farmers live-trap beavers to transplant them in less populated areas.

castor glands. These glands produce a yellow-orange liquid, castoreum, which is deposited on scent markers (usually a pile of mud and leaves) to delineate territorial boundaries. Castoreum was--and still is--used commercially as a fixative in perfumes.

Virginia beavers are active throughout the year. They become active during late afternoon, feed and work all night, and sleep during the day. Probably the best known habit of the beaver is its dam building. In fact, the beaver is one of the few animals which, like man, is able to modify its environment to suit itself. By damming a small stream, the beaver backs water up to shrubs and trees which serve as its primary source of food. Beavers utilize almost any available material when constructing dams. Foundation of the dam is usually a mesh of rocks and large waterlogged sticks anchored in the mud at a strategic location. Green leafy branches are then added to the mass. After weaving a latticework of brush, the beavers add mud and small stones to the upstream side of the dam. Eventually enough mud is added to effectively seal off the flow of water, and the water level rises to the height of the dam. Debris such as leaves, twigs and other suspended material floats up against the dam and further stops the seepage.

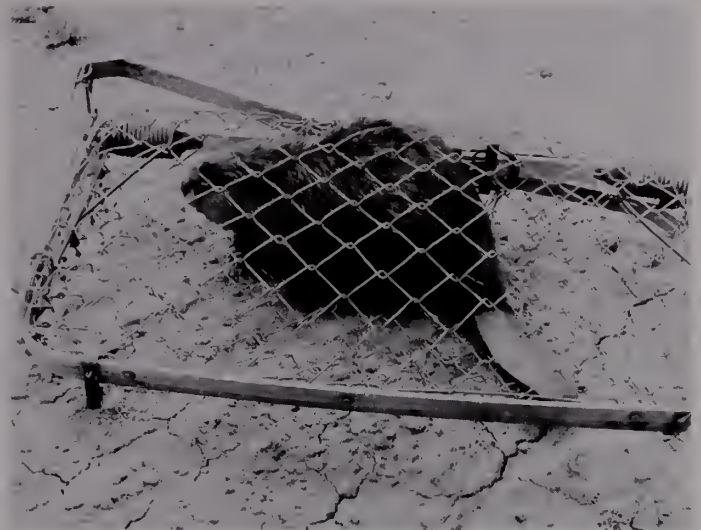
Unlike most Northern beavers, which normally build stick lodges, many of the beavers in Virginia, particularly in the piedmont area, build bank lodges. These dens are dug into stream banks, under tree roots and other suitable spots. The tunnels, sometimes as many as four, are always underwater, and are usually 10 to 15 feet long. These burrows are often branched and may open out either into a large dome-shaped chamber or several smaller chambers.

The other type of beaver home, often found in swamps, is the stick or island lodge. It is often built on a small rise in the bottom of a pond or stream. The lodge's construction is similar to that of a dam. It is composed of sticks and mud and is generally the shape of a round mound. The interior consists of a single room with two levels. Plunge holes (exits) are located in the lower level, which always remains under water.

From dusk to morning members of the family come and go, eating, grooming themselves and each other, or cutting fresh trees if alerted to danger, a beaver will snap up its flattened tail and bring it down hard on the surface of the water producing a large "Calunk!" This acts as a warning signal to other members of the colony.

Beavers are monogamous and mate for life. In Virginia, mating season extends from the last of January to early March. Beavers begin to breed when one-and-a-half to two years old. Average number of kits in a litter is four, but may vary from one to seven.

Gestation period lasts for 100 to 110 days. Kits are



born in May or June, averaging about a pound apiece at birth. They are born with their eyes open and with a full coat of fur, and are immediately able to move around inside the lodge.

A beaver colony which has not been trapped consists of an adult pair and their offspring of two generations--an average of five to six animals. During early spring those kits that are nearly two years old leave the family to begin their own colonies, temporarily shrinking the family to adults and first-year young.

The beaver has relatively few enemies. Man is probably their most common predator. Droughts, however, can cause considerable damage to the population. Generally speaking, factors such as predators, parasites, and diseases do not appear to control beavers over a long period. Their territorial behavior and the habitat conditions seem to determine the number of colonies an area will support, and how many beavers will be in the average colony.

Beavers are strict vegetarians, but are far from being choosy in their choice of plants. In Virginia they have been known to eat almost every species of tree, shrub, and plant in the vicinity of the lodge. Preferred species are aspen and popular. The animal will eat the entire bark of a small twig, but only the inner bark of a larger branch. If you are walking near a beaver pond, watch for the discarded portion of these larger branches: they bear teeth marks in beautiful and distinctive patterns. In early spring, the beaver abandons its woody diet and begins to feed on young ferns, roots of aquatic plants, and other tender young shoots.

Beavers pose a challenging but difficult problem in wildlife management. Their valuable fur, water conservation practices, and aesthetic values make them economic assets; yet the beaver's activities frequently conflict with man's interests. Hopefully, more research studies and a continuing public education effort will provide us all with a better understanding and appreciation of the beaver and, possibly, a more sound approach to its management.

Dove Shoot - Southern Style

By RICHARD KEVORKIAN
Richmond

There is one Southern institution that still makes strong impressions on newcomers. It is a happy hunter who's invited to an organized, Southern-style dove shoot. Whenever travelling North and engaging in the friendly art of off-season storytelling, I usually notice that dove shooting down South is referred to with a certain veneration.

Historically, the large, well-organized southern dove shoot acquired much of its reputation for elegance and ceremony when many of its followers came south to visit a manor house or plantation. Extra effort was given to ensure proper shooting grounds. Accommodations were prearranged, with hosts drawn from surrounding farms. Large numbers of hunters gathered, since in large fields many hunters are needed to help keep the birds flying. Supported by dove shooting being a gregarious sport, there were a few days of being wined and well-fed from menus including peanut-fed ham and bacon, pan-fried chicken, greens, and biscuits with every meal. This was coupled with just enough brisk fresh air and exercise to enable one to take his stand in a field with a growth of millet or cut corn edged by a few rows of standing stalks. Visitors then would begin to take on a glow of contentment. This was a complete experience in which new friends were

made and generous shooting limits were observed.

Today many hunters associate these large affairs with an extinct way of life, in which generosity had no bounds, and, incidentally, doves were more plentiful. However, in an altered form, this style of shooting still continues to be popular wherever there are enough birds and local politicians to justify the occasion.

This past season I participated in two social dove shoots. The first took place in Powhatan County in central Virginia, about thirty-five miles west of Richmond. It was by invitation only. There was no problem locating the hunt since the highway was backed up with cars whose drivers were waiting to present their cards of admission. After finally parking in a large field I walked around the cooking area. There were a half-dozen huge pigs, split down the middle, turning slowly over charcoaled embers while being basted with a thick barbeque sauce. The cooks had begun their work at dawn and the air was heavy with the smell of barbequed pork.

Back at the parking area, guides were waiting to take different groups of hunters out to productive fields. It was a hot day and the shadows cast by the sun were deep and cool. We were unloaded into a small field with recently cut corn, and took our positions under whatever shade we could find. After a few hours only a handful of doves had flown by. Realizing that limited shooting was to be had there, we loaded back into the

Dove shooters hone up techniques with a little pre-hunt trap shooting.



A canoe paddle is big enough to stir this kettle of Brunswick stew, typical lunch at a Virginia dove shoot.

Chevy Blazer and drove through the countryside, listening for sounds of active shooting. We zeroed in on another field of cut corn bordered by millet and began to get some shooting. The time was 3:30 p.m. and the doves were leaving their roosts for their evening feeding.

The weather was pleasant and we managed to get enough birds to feel satisfied. We returned to where the others of our party were waiting, patiently stretched out on the cool grass. In the middle of the equipment was a bushel basket partially filled with doves, to which we added ours. Once again in order to return to the main parking area, we presented tickets. Soon I was standing in line for a plate of barbeque, cole slaw, and brunswick stew.

Not long after, a smaller hunt was staged in King William County by the "Pheasant Pluckers Association," a group convinced there is an excellent time to be had when good food and good shooting are combined. We arrived in the early afternoon and pulled up on a long approach to a pleasant country house. Pre-lunch refreshments were being served and a number of people were scattered in small groups. We had time to enjoy some trap shooting and also watch a grandfather instruct his grandson in shooting techniques. He deliberately handed him shells, one by one, obviously stressing the importance of each. It was also obvious he was an excellent teacher as the youngster managed to break each clay sent out.

The pre-hunt lunch was a black, smokey cauldron of brunswick stew which had been stirred with a canoe paddle over an outdoor fire. I sat on the lawn and looked over the Mattaponi River flowing slowly toward West Point, Virginia, to merge with its sister river, the Pamunkey. From there is formed the historic York River which flows past the site of the defeat of Cornwallis and the English and their surrender to Lafayette and Washington at Yorktown. Automobiles began to arrive and trunks were left open as groups congregated to talk about doves or admire dogs and shotguns. After a number of "How-do's" and hot stew, we left for the surrounding fields.

Doves survive because of their combination of speed and an uncanny ability to seem to be flying a straight line, while they are actually weaving from side to side. Arriving at a field in the afternoon and taking a stand under a tree in a hedgerow or in a row of standing corn, the hunter sets up his folding stool and checks his line of vision against the afternoon sky. Guns are usually lighter upland game guns with 7½'s or 8's being the most popular shot. On an organized shoot hunters are usually dispersed on the edge of a field to cover it entirely and so keep the doves flying. Three of us have



hunted in a field and watched the birds feed undisturbed at the farthest reaches. When walked up they would light in another area and continue feeding until time to roost.

Once downed, doves are difficult to find in a field of millet or heavy weeds. A retrieving dog helps prevent losses. Many dogs will point dead birds, which serves the same purpose. These softly-plumed birds are not popular with some dogs since feathers come out easily and cover the inside of the dog's mouth. If the dog retrieves doves the feathers should be immediately removed from its mouth.

If no dog is used, mark the estimated spot where the bird went down. Walk immediately to the spot and lay down a hat, handkerchief, or any article that can be spotted easily. Then, working from the marker, walk off a series of concentric circles, making wider passes until the bird is found.

Back that evening on the lawn, we anxiously awaited the serving of barbequed beef. The conversation picked up and new introductions were made with names promptly forgotten. While perhaps it has lost some of the glory of former days, true relaxation and feelings of contentment are still uniquely offered by that aged southern institution, the social dove shoot.

Immobilization With Drugs

By R. E. MIRARCHI, P. F. SCANLON
and W. F. MURPHY, JR.
VPI & SU, Blacksburg

Research with wild species is greatly facilitated by the capture of live wild animals. Live capture allows the researcher to collect data without sacrificing the subject animal and also allows collection of a greater range of data. Many small mammals and birds can be captured by using traps or nets suited to the specific animal and situation encountered. Many large mammals have also been trapped alive but efficiency was not always high due in part to the failure of baits to attract animals away from natural foods. Traps for large mammals are also usually difficult to transport to desired sites due to excessive weight and bulk. In addition, trapping is non-selective in regards to sex and age of the animal trapped. Today, most of the larger mammals such as deer species may be efficiently captured by remotely injected drugs. This procedure has a distinct advantage over the use of drugged baits which are non-specific to members of an animal population. Injectable drugs allow the researcher to select specific animals of size, sex, and other desired characteristics. These drugs are usually delivered to the subject animal by means of a syringe-like projectile. Pistols, rifles, and shotguns have been specifically modified to shoot the various types of syringes or darts devised to inject the drugs. Other devices have been used to project syringes including the long bow, cross bow, and even the blowgun.

Several drugs have been successfully used by remote injection to capture a wide range of animal species, including many of the large mammals of Africa, Europe, North America, Asia and Australia. The ostrich, largest of all birds, has also been captured using this method. Capture of animals may be for purposes of marking, transportation physiological data collection, blood sampling, or for examination and treatment of injured and sick animals. Available drugs render the animal immobile either through muscle relaxation or by induction of anesthesia. These drugs may be in either liquid or solid form depending upon the drug's properties and on the type of syringe or dart used. In either case, the amount of drug used, or dosage for immobilization is dependent to a great extent upon the body weight and metabolic rate of the animal. In some instances drug dosages may be measured out while in the field, placed into a syringe, and then loaded into the gun. Since this process is time consuming, at least one method has been devised whereby the immobilizing drug comes in darts already pre-packed in various dos-

ages. This enables easier handling and quick use while in the field.

Maximum effective ranges of projectile syringes shot from guns are short. Typically these are from 25 to 70 yards depending on the type of equipment. Because of this limitation considerable importance is attached to the method of approaching the animal. Research at Virginia Polytechnic Institute and State University has indicated that white-tailed deer are more readily approached by a vehicle than by persons stalking on foot. This may not necessarily be the case for other species in other situations and in fact, reports are available which indicate successful approaches of animals by persons on foot and by helicopter as well as by terrestrial vehicle. Drugs have also been used to immobilize animals trapped in large enclosures.

Typically, once a desirable subject animal is located, a suitable dose level of drug is chosen and the animal is shot with the syringe or dart. Care is taken to hit the animal in a heavily muscled area of the body to minimize risk of physical injury by the syringe. The animal is then observed until immobilization is achieved or until it is decided that the animal will not respond to the drug dose. Differences occur between species in the flight distance after striking with the syringe or dart. From our experience white-tailed deer rarely flee over long distances and often do not flee at all. Obviously long flight distances in heavily wooded areas would render location of immobilized animals extremely difficult. With short or negligible flight distances or in open country continuous observation of injected animals may be made and immobilized animals readily located.

After location of immobilized animals, examinations are made to ensure comfort and safety of the animals. Once these are assured, the pertinent data are collected and the animals are observed until recovery is imminent. Then the animal is left to resume normal activities, the start of which is observed from a distance. Should an animal encounter respiratory problems during immobilization resuscitation assistance is provided.

Ideally, an immobilizing drug should be effective in very small doses so that size of projectile syringes can be made as small as possible and thus improve their ballistic properties. The drug should be fast-acting, have a wide safety margin, be readily counteracted by an antidote and have no adverse side effects. At the present time, an ideal drug to satisfy all these requirements is not available. Research continues to find such a drug or to find a combination of drugs which will satisfy these criteria.



Left: Immobilization Equipment; (a) modified shotgun; (b) chamber modifier; (c) darts for injection; (d) powder charges to propel darts; (e) syringe for liquid drugs; (f) used darts. When a desired animal is located within range, the dose level is quickly chosen. The target area is the animal's hip.



In conclusion, it can be said that the ability to immobilize large animals is a valuable asset to the wildlife researcher and with greater reliability can add significantly to research achievements in the future. Similarly, immobilization of wild animals can be very useful in certain situations to the wildlife management biologists. Such an application could be the capture and relocation of animals. Examples of such successful uses in Virginia have been the capture and relocation of such species as deer and bear.



autumn leaves

By BILL WEEKES
Spartanburg, South Carolina

Color. Foliage. Put them together and you have autumn. Combine them and you promote weekend excursions to the countryside. Unite them and you provoke pronouncements of appreciation. Wed them and you inspire a visual symphony.

But what causes the colors--the "notes" that give each species' foliage its own particular "pitch?" First, a little about leaf structure and the substances flowing through the leaf. Each leaf has a stem, or petiole, which connects it to the twig. It is the final passageway through which soluble nutrients, absorbed by roots and conducted up through the tree trunk, branch and twig, flow into the leaf.

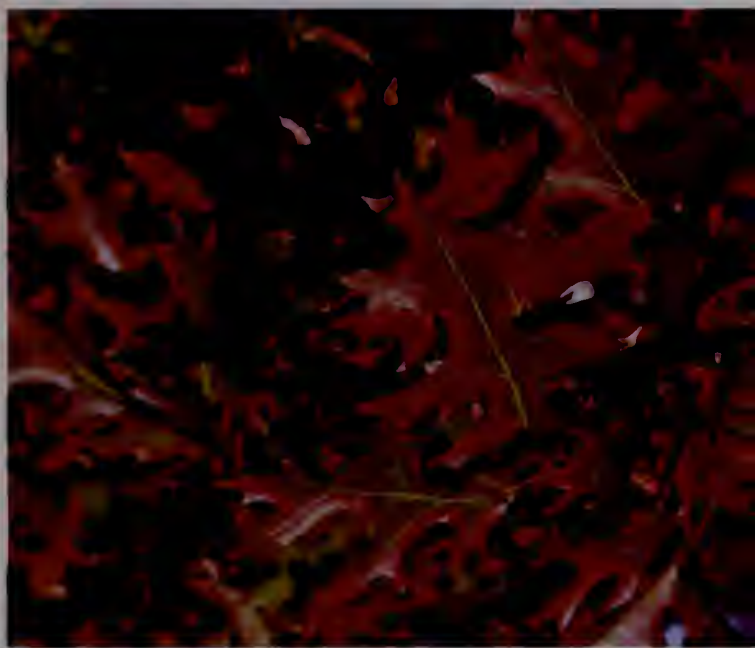
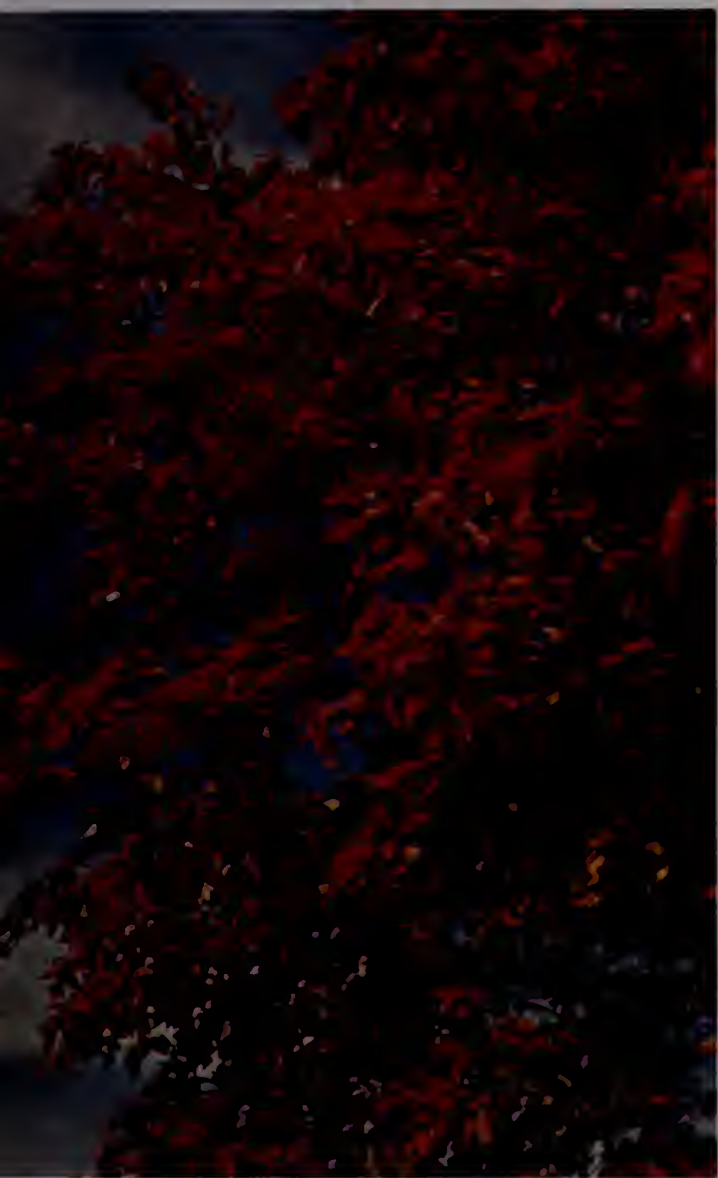
Throughout the leaf itself, floating in the cell sap, are

tiny capsules, or disk-like bodies, called chloroplasts. They house chlorophyll, the very substance necessary for food (starch) making in the process photosynthesis. Two pigments which, along with the energy present in the sun's light rays and the carbon dioxide taken in by the leaf, help chlorophyll to make food also dwell in the chloroplasts. They are xanthophyll, which is yellow, and carotene, which is orange. Because they are present in such small quantity these pigments are easily masked by chlorophyll's green.

But with the passing of summer, the days grow shorter. Less sunlight means less food-making. The nights turn cooler. The dip in temperature arrests production of chlorophyll. To these is added a third phenomenon--the shutting off of nutrients to the leaf. With the retardation of the leaf's life processes, a corky layer forms across the base of the petiole.

With fall, the blades of deciduous leaves hone a keen chromatic edge which blends into a harmonious chorus. Left: Sumac. Below: Black Oak.

Maples are the Bachs and Beethovens of autumnal color.



The disappearance of chlorophyll allows xanthophyll and carotene to show their colors. Yellow, orange and red is manifested in the leaf. These pigments are common.

There is another class of pigments, however. They are the anthocyanins, water soluble pigments not found in chloroplasts but accumulated in the leaf's upper cell layer, eventually masking or partially masking xanthophyll and carotene pigments. Anthocyanin formation is encouraged by sugar concentration in the leaf-- especially at the time when the separation layer in the petiole not only isolates sugar broken down from starch, but also shuts off the flow of nutrients to the leaf.

The anthocyanins, absent from leaves in summer, give them their brilliant cast in autumn. Dissolved in

the cell sap, these pigments are responsible for vivid scarlet, crimson and purple colors in the fall. These shades come about when the anthocyanins are not successful in completely hiding the carotene pigment or the lingering green of chlorophyll in the lower cell layers. This explains why the red dogwood leaf eventually turns a dark purple, and why reds of the sumac and black gum have such a deep glow. Also, the production of anthocyanin is, in part, determined by heredity, perhaps explaining why some maples are red, some yellow.

By mid-November "the sound of music" has been stilled. The "instruments" have been either packed away in the underbrush as humus, or scooped up in heaps to be burned--perhaps as an offering to the Old Master Painter.

Personalities

by F. N. Satterlee



**FRANK F. EVEREST, JR., COMMISSIONER
EIGHTH CONGRESSIONAL DISTRICT**

Frank Everest's father was a career military man and it was during the time that the senior Everest was stationed in Galveston, Texas that Frank was born. His early life was a long succession of moves as his father was transferred from one assignment to another. Consequently Frank actually spent his maturing years growing up "all over" at such places as Rantoul, Illinois, Wheeler Field in Hawaii, Lowry Air Force Base in Colorado and Washington D.C., just to mention some of the locations.

During one of these assignments, at Fort Logan, Colorado to be exact, Frank's father started training him to shoot on the post rifle range. The elder Everest and his father before him were hunters, so the tradition was now being passed on. Soon he was receiving instruction on skeet and trap ranges. This early formal

training, plus a chance to get in some fine hunting while spending three years in Alaska, really got Frank off to a good start in the outdoors.

Following graduation from High School in New Jersey, he attended Iowa State College in Ames, Iowa majoring in Farm Operation.

Frank joined the United States Air Force and graduated from flying school in 1954. In November of that same year, he married the former Jean Boguess of Alexandria, Virginia. In all, he served for four years as a fighter pilot in Texas and in Germany with the 23rd Fighter Day Squadron in the Twelfth Air Force.

After serving in USAF he returned to Virginia to enter the steel business. He is currently Executive Vice President of Southern Iron Works, Inc. and President of Edsall Interchange Investment, Inc., both of which are located in Northern Virginia.

In December of 1974, Governor Mills E. Godwin, Jr. appointed Frank Everest to a six-year term as Commissioner for the Eighth Congressional District. In this capacity, he finds that the most satisfying aspect is the knowledge, both personal and formal, that he is gaining about the subjects of which he is so fond; wildlife and the environment. This insight, plus the wide and varied experiences and first hand knowledge he has accumulated over the years, is not only personally gratifying, but enables him to more ably serve the sportsmen and women whom he represents in the Commonwealth.

Frank and Mrs. Everest make their home in the Waynewood subdivision of Fairfax County.



VIRGINIA WILDLIFE

VIRGINIA WILDLIFE

CONSERVATIONGRAM

Commission Activities and Late Wildlife News . . . At A Glance

BIG GAME TROPHY SHOW DATES SET. The 36th Annual State Big Game Trophy Show will be held in Harrisonburg, Virginia on October 23, 1976. The show will take place in the Harrisonburg Auto Auction Building, which is located at Exit 62, off Interstate 81. The trophy contest is divided into six classes which are: Class I, deer, nine points or better; Class II, deer, seven or eight points; Class III, deer, six points or less; Class IV, archery, deer; Class V, turkey toms; and Class VI, bear. Resident and non-resident sportsmen, having taken trophies this past season (1975-76) may enter them in the contest. All entries must have a valid big game stamp in order to qualify for the competition and all trophies must be physically present. The trophy may be mounted or merely a rack of antlers. The antlers must be attached to the skull. The taxidermist's skill or mounting is not a consideration in this contest. The judging will be under the direction of Max Carpenter, District Game Biologist for the Virginia Game Commission. In order to be entered in the state contest, a trophy must have first been entered in either the Eastern Regional or the Western Regional contest. The top five (5) winners in each regional contest in each category are considered for state trophies. The Eastern Regional contest will be held this year on October 9 at Deer Park Elementary School in Newport News. The school is located at the Intersection of Routes 143 and 17. The Eastern contest follows the same basic rules as the Western, except that there is a \$3 entry fee. For information on the Eastern contest, contact Robert L. McDaniel, 39 Glendale Road, Newport News, Virginia 23606. Phone: 804-596-6785(R), 804-878-3692(B). The Western Contest will be held on October 22 and 23, in conjunction with the statewide contest, and is sponsored by the Harrisonburg-Rockingham Chapter of the Izaak Walton League of America. For information on the western and state contests, contact Larry A. Dickenson, Penn Laird, Virginia 22846. Phone: 703-434-5097.

TURKEY CALLING CONTEST SCHEDULED. The National Wild Turkey Federation will sponsor the Virginia State Champion Turkey Calling Contest on October 17, 1976. The contest will take place at James Wood High School, Route 50 West, Winchester, Virginia. There will be three classes of competition; Resident, Non-resident and Junior (16 years of age and under). The entrance fee for contestants is \$5 and participants must register before 1:00 p.m. on the contest day (the contest will begin at 1:30 p.m.). Among those judging the competition will be Kit Shaffer, Game Commission Supervising Biologist. Trophies will be awarded for the top callers. Refreshments will be available and a feature attraction of the afternoon will be demonstrations by the 1976 World Champion Caller, Bob Keck of Pennsylvania. Contestants may pre-register by writing Ted Foster, 717 Merriman's Lane, Winchester, Virginia 22601. Phone: 703-667-2454.

Big Game Tag Price Tag

By ED PEARCE
Orlando, Florida

In the October edition, 1972, of *Outdoors in Georgia* an article captioned "Georgia's White-Tailed Deer" by Aron Pass had this to say "Last year's harvest (of deer) accounted for 33,348 deer taken by 155,275 hunters, or one deer bagged for each every 4.7 hunters. Sam Deerstalker, the average Georgia hunter, spends 7½ days hunting each season and collects a deer for every 35 days he hunts; about one deer every five seasons. For this, Sam and his fellow deer hunters (52% of the state's licensed hunters go after deer) spent \$9,371,000 in the 1971-1972 season. Sam spends about \$286.49 for every deer he bags.

I have a hunch that the \$286.49 cost per deer bagged in Georgia in 1971 is far less than the comparable cost in the northern and western states where across-the-board hunting costs are much higher.

When you further consider that it's an established custom for the successful hunter to share his deer with his unsuccessful hunting companions (it certainly works that way in both hunting parties and clubs), the price he pays for what he takes home becomes much higher. If "Sam Deerstalker" follows this custom and takes home the liver and heart (traditionally earmarked for the shooter), a few steaks, a couple of roasts and some stew meat, or about 20 lbs, the cost per pound is probably in the \$15-\$20 range.

As I remember my initiation to the sport many years ago, all I had to do was somehow get hold of a shotgun, a few shells and go hunting. Hunters were comparatively few in number in those bygone days. Hunting

What is the highest priced meat in the world? Beef? Capercaillie? The gourmet's delight, pheasant? It's none of these. It's venison, the meat from the white-tail deer.

	Requirements	Optional
GUNS-RIFLES	135.00	\$ 47.00
7 mm. or 30 cal.	5.00	
Scope and mount	17.50	
Cleaning Kit	5.50	
Carrying Case	variable	
Ammunition (20)		
Bore-sighting Cost		
GUNS-SHOTGUNS	105.00	60.00
12 Gauge pump	3.00	
12 gauge automatic	5.00	
Sling and swivels	10.00	
Cleaning Kit	6.50	
Carrying Case	6.00	
Ammunition-Slugs	30.00	
Ammunition-Other		
Special Deer Barrel		
Polychoke (or similar device)		
CLOTHING		
Hat (ear flaps)	4.00	
Shirt (Wool)	6.95	
Jacket or Coat	30.00	
Trousers	20.00	
Gloves	3.85	
Socks (2 pr.)	6.00	
Belt (wide)	20.00	
Jacket Liner	4.50	
Hood	10.00	
Underwear (Thermal)	3.00	
Snowpaks		
Boots		
Suspenders		
ACCESSORIES		
Hunting Knife (in scabbard)	8.95	
10 ft. nylon rope	3.00	
Snakebite Kit	7.98	
Pocket Knife	7.98	
Signal Flares (3)	1.88	
Waterproofed Matches	1.79	
Polyethylene Bag	1.25	
Plastic Gloves	5.00	
Chocolate Bars	variable	
Hunting License (res.)	1.00	
Permits		
Targets (Stationary)		
Targets (Moving)		
Hunting Club Dues (Average)		
Flashlight with batteries	4.49	
Canteen		
Binoculars (7-Power)		
Compass, pocket		
Thermos		
Totals		
	3.50	40.00
	28.00	75.00
	2.50	
	\$531.29	\$297.95

grounds were no farther than the city limits of the small town I grew up in so we walked to them and needed no transportation. Whatever game came first we shot--a quail, a dove, a squirrel, a turkey or a rabbit. A little later, at 16, I scrounged a few buckshot from an uncle and bagged my first deer. Little, if any, control was then exercised over wildlife; seasons were the year around. Landowners didn't object to your hunting on their land, and the cost of hunting was very small.

But today things are different. Wherever I hunt, there's almost always a rather heated discussion as to the items a good hunter needs and the cost of each item. Over a long period of time, I've found that the

ones who pride themselves on how cheaply they hunt are usually the least successful. At times their niggardliness leads to accidents; they get lost because of the lack of a map and a compass, and they don't hesitate to impose on a fellow-hunter who is properly equipped. They drink your water (for lack of a canteen), borrow ammunition, expect someone else to provide a knife for the gutting (I've even had one hunter borrow my extra pair of socks). In general, they are a nuisance. Needless to say, they don't often receive repeat invitations to hunt.

A question by a prospective member of our hunting club started the ball rolling. He wanted to know how much it would cost him to hunt; what he needed to start with in the way of clothing, weapons, ammunition and accessories. He was young, recently married and his earnings no doubt small.

There were several off-the-cuff answers from various members of the club, ranging from \$300 up. While we were at the hunting camp table enjoying a delicious venison stew, we batted the subject around. I finally agreed to come up with a priced, itemized list of what I believed the average and good hunter needed.

The only facts on the subject I knew were some recently published figures showing that this country's hunters spent 3.8 billion dollars in 1971 on hunting equipment, including clothing, guns, ammunition and accessories. With our 19 million hunters (licenses sold in



1971), this averages out to \$200 per hunter for the one year. But averages are deceiving. This figure included both initial equipage for new hunters as well as replacements and additions for the older hunters. Also, some hunters hunt only deer and other big game, others only upland game, still others hunt both. Obviously, these and other variances, such as personal preferences, individual abilities, and degree of participation influence both the initial and recurring annual costs to individual hunters.

I consider myself an average hunter, and hunt deer, bear, turkey, squirrel, quail, dove, rabbit, rail, ducks and geese. I don't make extended trips to hunt, but do

go into neighboring states on occasion for specific types of game. I supply myself with clothes in which I can be comfortable regardless of the weather and with accessories which will help me in accomplishing what I set out to do, enjoy the hunt, bag the game and take good care of it after I get it. With the hunting equipment I have accumulated over the years, and the proper ammunition for the game to be hunted, I believe I'm prepared to hunt.

In pricing this list, I've used current retail prices from catalogues of well-known merchandising firms. While such prices are neither the cheapest nor the costliest, they do represent what you'd pay for serviceable quality.

I consider the items on this list minimum initial requirements for the average hunter. Thus an average hunter's minimum outlay approximates \$531.29, plus the cost of boresighting his rifle, practice and other ammunition.

These figures represent the cost of new items. He can reduce this figure to some extent by smart shopping. Used guns are available at gun shops at reduced prices; so are many of the accessories at Army-Navy surplus stores. But he should be sure any such purchases are serviceable and safe.

To compare your hunting items with ours, be sure to take into consideration the variables. If you hunt in a state which bars the use of rifles, or if you don't hunt bear or deer, you may not wish to spend the \$163 for the rifle and accompanying items. If you hunt only the big game where rifles are allowed, you may not wish to buy the shotgun and related items priced at \$165.50. If you always hunt in warm climates, you may reduce your requirements by eliminating the cold-weather gear. There may be still other variations peculiar to you and your type of hunting which would affect the costs to you.

But remember, it's far more preferable to have the borderline items when you need them than to have their lack contribute to your physical discomfort or failure to get game.

This initial outfitting is not the total cost of hunting. To this must be added the annual expenses: meals, transportation, motels, non-resident licenses, special game fees, maintenance and replacement equipment costs, guide's fees, butcher and freezer costs--all in accordance with each individual's own hunting activities. If he gets into camping equipment, special four-wheel-drive vehicles, etc., his costs will mount still higher.

When you remember that hunting offers so much more than just a chance to get delicious meat you can't get elsewhere, I believe you'll agree that the cost of active participation is not prohibitive and each dollar you spend returns full value! If I didn't believe that, I wouldn't have hunted for 50 years nor would I be "Telling it like it is."

Abomasum

By MICHAEL D. SPANEL
Fort A.P. Hill

Each wildlife species needs basic habitat elements in order to survive: a specific place to live that will provide food, water, shelter, nesting and hiding places. When a particular area provides these needed elements, it can then provide habitat only to the extent of its natural abundance. The maximum number of a species that can be maintained by a particular area is usually referred to as "carrying capacity."

Measuring "carrying capacity" is an important part of any game management program. This is usually done by studying a resident species on an area for disease, poor reproduction, body size, and other indications that there are too many animals living in one area.

One tool used to measure the carrying capacity for deer, is known as an abomasum worm count. The abomasum is the true gastric stomach of the deer. Within this stomach, parasite worms often multiply to excess in habitats where the deer population is too high for the carrying capacity. As a research project, game biologists, study this abomasum (stomach) in deer carcasses on areas in question to determine whether or not the parasite count is more than it should be. This gives them an idea as to whether or not carrying capacity of the area is over-extended.

Such a study has been carried out on Fort A.P. Hill in recent years. In 1967 when the study began, information gathered by biologists working with the Southeastern Cooperative Wildlife Disease Center located in Athens, Georgia discovered the APC (Abomasal Parasite Count) to be between 1,000 and 2,000 worms per adult deer. Utilizing research information assembled by the Disease Center, guidelines for interpreting data were established. Categories reflected the experiences in Deer/Parasite interactions over the past 20 years. Designations of categories were as follows: High Count APC--1,000 or more; Moderate APC--500 to 1,000; and Low APC-500 or less.

The average APC of a sample of five deer collected during the 1972-73 season in the A.P. Hill Impact Area revealed a count of 2,264 parasites per deer. This count

indicated the deer population within the Impact Area might be in excess of the carrying capacity. (Impact Area is the term applied to that area of Fort A.P. Hill containing the greatest abundance of deer where practice firing shells impact or explode.)

Herd reduction would be necessary if the level of the population was to be maintained at the carrying capacity of the habitat within the area. Hunting seasons were liberalized to provide for an increase in the doe kill within the Impact Area. The doe kill increased over the next few years to the point where herd reduction appeared to be taking place. Evidence of this reduction was determined by survey techniques established by the biologists with the Commission of Game and Inland Fisheries in conjunction with the personnel of Fort A.P. Hill Wildlife Section. Track counts, night population surveys and tagging operations verified this.

After the 1972-73 parasite count of 2,264 per adult deer, the doe kill was counted at 330 animals. The results of this high doe kill became evident the following winter when the APC count showed an appreciable decline to 584 worms per adult deer. This count taken during the 1973-74 season indicated that the herd level was now compatible with the habitat. The result of many years of high doe kill within the Impact Area were now beginning to show. The season was now reduced from a 24-day-doe season to a 12-day-doe season. This allowed wildlife personnel to further observe the population. Surveys indicated the herd was decreasing. The 1974-75 season was a split season with 12 doe days within the Impact Area and one doe day the first day, in Training Areas North of route 301 (the Nonimpact Area). This season accomplished the objective set by the wildlife personnel to further bring the population down within the Impact Area and to provide for a slight herd build-up in the Training Areas North of route 301 (the Non-impact Areas).

The APC count taken in the impact area during the 1974-75 season was the lowest ever. The average worm burden of 412 worms per adult deer indicated that the herd was now in line with the carrying capacity. In an attempt to maintain this level a new bag limit has been set for the 1976-77 season. This new bag limit is one doe per hunter which may be killed during the last six days within the Impact area and one doe per hunter which may be killed the last hunting day on non-impact areas. This will allow for herd build-up once again and provide the sportsman with an opportunity to harvest a doe.

This, then, is another step toward the use of "Parascript," which can be defined as "the language of parasites which tells of themselves and their hosts both of today and yesteryear."

Average APC Counts Statewide — 1974-75

Columbia-	
Cumberland	1616
Quantico MCB	1748
Dismal Swamp	1080
Yorktown NWS	1604
Bath	2500
Grayson	1552
Rockingham	536
A.P. Hill	412



By GEORGE H. HARRISON
Hubertus, Wisconsin

"When I think of Virginia, I recall many wonderful days of birding on the Blue Ridge Parkway, the Eastern shore, northern Virginia and the area around Fort Belvoir.

I remember when I was stationed at Belvoir, one of the commanding officers asked me to take his young daughter on a bird walk. She was keen on birds and the colonel thought that I could help her further her interest. I recall showing her the first redstart she had ever seen and how excited the little girl was at seeing this striking warbler. Twenty years later, that same young lady earned her doctoral degree at Cornell University for her studies of the redstart. Today she is working on ethological problems at Cornell.

On another occasion at Fort Belvoir, I found a horned lark's nest on the parade ground. I was only a PFC at the time, but I went to the commanding officer and convinced him to have the route of the parade changed because hundreds of troops were scheduled to march right over the bird's nest."

Roger Tory Peterson is considered by millions to be the man who brought bird watching to the average American. Because of that, Peterson's contribution to the 20th Century is even greater than that of John James Audubon one hundred years earlier. Not only is Peterson the bird artist of the day, as was Audubon, but in addition, Peterson's simple method of bird identification, devised more than 40 years ago, is the standard for recognizing birds the world over.

Before publication of Peterson's *A Field Guide To The Birds* in 1934, bird watching wasn't much fun. In fact, it was nearly impossible to identify most species and few people had the patience to try.

The first real breakthrough came after World War I when binoculars became available for a close-up look at birds and other kinds of wildlife, but the reference books of the day did not tell the observer how to differentiate between similar species.

"In those days," recalls Peterson, "most bird books

were written by museum people who described the dead birds they found in museum collections. Instead of saying that a robin was a gray-backed bird with a rusty breast, they described it in the minutest detail, including the white spots about the eye and the streaked throat," Peterson explained.

Peterson's field guide and its revolutionary concepts were not easy to sell, and it wasn't until he had been turned down by four publishers that Houghton Mifflin of Boston agreed to gamble on it. So concerned, however, that the book might not be a success, Houghton Mifflin printed only 1,000 copies, sold them for \$2.75 each, and asked the author to forego all royalties on the first printing. Today, that book and its many revisions is in its 48th printing and, along with the other 20 editions in the Peterson Field Guide Series, have sold more than two million copies.

"Three hundred years from now, the year 1934 will be regarded as a turning point in man's relationship to



BOBOLINK



BALTIMORE ORIOLE

his environment," declared James Tucker, Secretary of the American Birding Association. "It will symbolize man reaching the point of enjoying wildlife without having to live off it."

Enjoying wildlife, particularly birds, for most Virginians means being able to identify and study unique behavior and characteristics of each species. All of this has been possible since 1934 based on Roger Tory Peterson's system of identification: size, shape, how it acts, how it flies, and field marks such as a spot on the breast, wing bars, eye lines or flashing tail feathers.

To the horror of many scientists of the '30s, Peterson's book groups some birds by similarity in appearance, not necessarily by biological relationships. Thus, the chimney swift is on the same color plate as the swallows. A pointer draws attention to the fact that the swift looks like a swallow without a tail and is described as "a cigar with wings."

Roger Peterson didn't just stumble onto his field guide technique; he grew up to it. The son of a furniture maker in Jamestown, New York, Roger Tory Peterson was born in 1908. As long as he can remember, he has been interested in art and birds. In the seventh grade, he recalls copying a Fuertes bluejay for an art class. . . and having it credited to a competitor in the class. . . something he has since learned to tolerate, for his definitive paintings are as much copied and imitated as any art in his field. "You can spot them by the way they copy your mistakes," Peterson chuckles.

That same seventh grade class, however, provided a turning point in Peterson's young life when he joined a Junior Audubon Club and became hooked on wildlife.



WOOD THRUSH

He was most interested in the National Audubon Society's identification leaflets. . . not dreaming that 20 years later he would be rewriting and reillustrating them.

Peterson's continuing interest in art and in birds received a big boost at age 16 when he showed some of his work to Dr. Arthur Allen, the distinguished Cornell University ornithologist, who praised it.

With new enthusiasm, Peterson went on to the Art Student's League and the National Academy of Design, supporting himself by drawing designs on furniture. After three years as an art teacher in a Boston prep school, he joined the staff of the National Audubon Society, where for 10 years he was the art director of Audubon and in charge of their educational activities. It was during this period that Peterson began to regard himself as a teacher, or as he puts it, "an elucidator." "I like to think of myself as the middle-man between the academic ornithologist and the layman" . . . and from this line of thinking he developed *A Field Guide To The Birds*.

Now, at 68, Roger Tory Peterson is a distinguished-looking man with white hair and a soft and considerate manner. To meet him on the street or along a wooded trail one might think of him as a doctor, a professor or a lawyer.

His accomplishments are many. They include six honorary doctor of science degrees, scores of medals and awards among which are the highest presented in the field of conservation and natural history. He has authored eight books, co-authored seven more and illustrated six, with several more in preparation. His *A Field Guide To The Birds* is undergoing still another,



CARDINAL





"I chose to paint this trio of jays in a setting of winter oak leaves, sear and brown, but still clinging to the twigs. Jays and oaks are inseparable, and it is believed that jays, like squirrels, are important to the regeneration of the forest, hiding many acorns that they do not retrieve and which later germinate. Although some people dislike blue jays because of their aggressiveness, I do not. They are beautiful, and successful in coping with life."

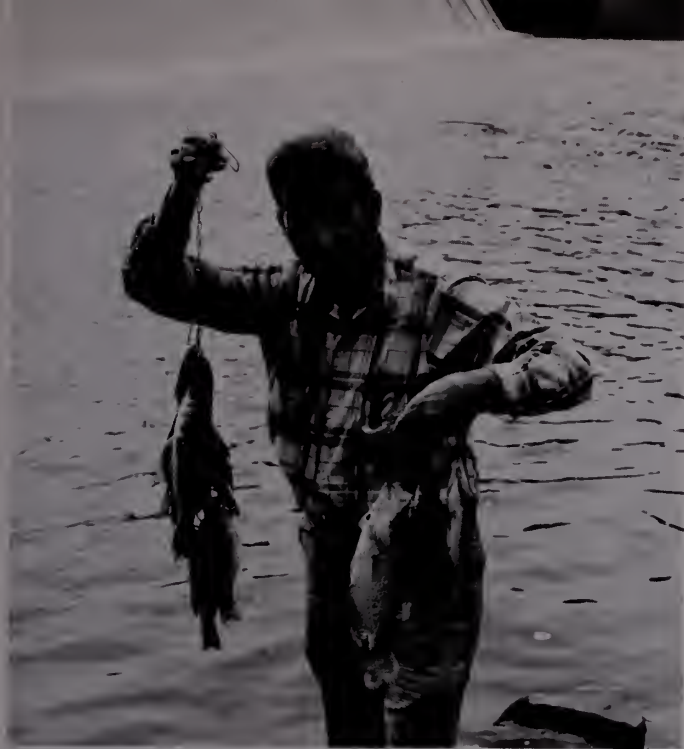
and perhaps the most drastic, revision. It will be a totally rewritten and updated edition containing all new color plates.

His finest paintings are his most recent. For the past three years, Peterson has been painting art prints which are published by Mill Pond Press, 204 S. Nassau St., Venice, Fla. 33595. These limited edition creations include those which illustrate this article and are the kind of art for which Peterson wants to be remembered. "I must get about doing more 'proper art,' " he remarked to me some years ago while I was visiting his home in Old Lyme, Connecticut. "I want to be remembered as a fine art painter, not as an author of field guides." He is well on his way to accomplishing that goal, too, though it will be difficult, if not impossible, to cancel out the field guide accomplishments which have made Roger Tory Peterson a household word.

The whole sport of bird watching continues to grow

at an amazing rate. The most common interest today is in the backyard variety. New research from Amherst University a couple years ago showed a simple and inexpensive way to attract birds to typical suburban backyards by planting and building a backyard wildlife habitat. The idea is catching on and backyard habitats are sprouting everywhere. Peterson used the Amherst research in his own backyard last year and built a small pond and planted many of the recommended trees, shrubs and plants. Next to this backyard wildlife habitat, he built a new studio and film library with huge thermopane windows for observing the wildlife while he works inside.

For a time, Peterson lived in Alexandria, and among his memories of the Old Dominion are those days when he birded around Mount Vernon, along the Potomac River and Chesapeake Bay. "I have spent many pleasant days in Virginia and I will always remember the people I met and the good birding we enjoyed."



Picking the Goose

By DICK GOULD
Fredericksburg

Considering the bird for which it was named, Goose Creek is really just a fickle little trickle.

The wild goose, one of the largest of North America's birds, carries himself always with a regal grace. And, from time immemorial, he and his kind have migrated through the area we now call Virginia with such regularity that the Algonquins who made their home here in prehistoric times reckoned the passage of years by the number of times they had seen the great flocks of "ca-honks" come.

By contrast, the creek up in Loudoun County amounts to very little more than 30 linear miles -- measuring only the main stem, of course -- and is nowhere more than a few feet deep nor much more than 50 feet wide when flowing at its "normal" levels.

Depending on the vagaries of local precipitation trends, the Goose may peter out to almost nothing one day and turn into a muddy torrent the next day -- too thick to drink, not quite thick enough to plow, and often spewing over and beyond its high banks.

But, like the Rivanna which was given state scenic river status by the 1975 session of the Virginia General Assembly, the Goose is pretty in the sense that all outdoors is pretty. Virtually on the doorstep of metropolitan Washington, the Goose Creek watershed remains an



Left: The best fishing in Goose Creek is immediately above and below the Fairfax city dam about two miles south of the rte. 7 bridge. Above: Goose Creek meanders through the Virginia countryside.

unspoiled rural area, and an apparently dominant faction of riparian landowners has expressed concern for keeping it that way.

Though there has been some dissent among the local landowners, as this is being written in mid-December the dissent has not reached the majority proportions such as has apparently thwarted a simultaneous effort, through last summer and fall, to provide the protection of scenic river status for the nationally known white-water reaches of the Rappahannock.

And, though there has been some public discussion of the possibility of impounding more of the upper reaches of Goose Creek to supplement the municipal water supply now being drawn from the one reservoir about two miles south of Route 7 bridge, there are no immediate plans of the kind that effectively emasculated the 1975 legislation intended to help protect the Staunton River and its vitally significant spawning run of landlocked striped bass.

The City of Fairfax is now attempting to get voter approval of a bond issue to be used to improve and expand the city's water plant adjacent to the Goose Creek reservoir. A spokesman for the city appeared at the public hearing in Leesburg in October to ask that scenic designation include some assurance that the city

. . . the Goose may peter out to almost nothing one day and turn into a raging torrent the next . . .

would be allowed to increase the height of the existing dam if it should be necessary.

The only specific effect of Virginia's currently existing scenic rivers legislation is the prohibition of the building of dams and impoundments on any designated river, except with the expressed permission of the General Assembly. As in several of the earlier drives for scenic river designation, conflicting views over the prospect of a dam is the central issue on Goose Creek.

Designation of the Goose might help bring about a greater awareness of the value of scenic rivers and -- perhaps -- it might mean easier public access to at least some portions of the waterway.

Last fall, when Virginia's Commission of Outdoor Recreation proposed scenic status for a 27.5-mile segment of the Goose, from the Loudoun-Fauquier line to the junction with the Potomac, the COR proposed two public access areas, at or near the Route 611 and Route 621 bridges, and a combination day-use and access area somewhere near the mouth of North Fork. The only existing public access along Goose Creek is the graded but unpaved road leading from the water plant down to the dam.

However, when plans for scenic designation were aired at a public hearing in Leesburg in October, a number of the local landowners who favored the proposal, especially the anti-dam provision, opposed suggestions to make the area more accessible to the public, especially the suggestion for a day-use or picnic area. Much of the land along the creek is posted and many landowners complained that they now have serious problems with littering and rowdiness by trespassers.

As with many other Virginia waterways, gaining access to the Goose is the biggest problem faced by a boater or fisherman who would like to spend a few quiet hours there.

Though lawyers who have checked into this problem tell me that there are a couple of feet of public right-of-way on either side of the approaches to most highway bridges, I have found it often impractical, even dangerous, to try to carry a canoe along such narrow pathways without wandering a step or two into adjacent privately owned property. Also, along the Goose and many other popular canoeing streams in Virginia, the road shoulders are too narrow to permit a car to be safely parked off the travel portion of the

roadway without getting on somebody's private property.

I've had no trouble in getting permission to cross private property to put a canoe into the Goose, perhaps partly because I usually go alone or with only a few companions. Large groups which need more parking space and sometimes tend to be a bit noisier might suffer less hospitable receptions.

The creek is swift, even when it is flowing at relatively low levels, but there are only a few, short stretches of white water at the sites of old broken-down dams. In colonial times, a series of dams and locks were built to make the creek navigable as far as the old Carter plantation, Oatlands, near the Route 15 bridge. There were several mill dams above that. All are gone. The only existing dam is Fairfax city's, about 20 feet high, and boaters should take care not to be swept over that, of course. The rest of the creek should present few problems to any except the rankest of beginning paddlers. It should be noted, however, that in its flood stages, the Goose, like most other canoeing streams, should be considered dangerous. The Goose carries a lot of flotsam and this has piled up in logjams which can be very dangerous in high water.

Boaters who like to enjoy the scenery as they paddle leisurely down a pretty, pristine stream may be disappointed with the Goose. Sure, the creek meanders through some of Virginia's most beautiful, rolling countryside. The valley of the Goose, almost entirely in Mercer and Dulles districts of Loudoun County, seems to be made up entirely of country gentlemen's estates where prize cattle and racehorses graze in lush pastures around well-tended barns. But you won't see much of it from a boat on the creek. The view is mostly obscured by muddy banks, ten to twelve feet high.

With the exception of the waters immediately above and below Fairfax City's reservoir, I found the fishing only fair. Local people tell me that there are small-mouth bass in there. Could be. I can vouch for the presence of catfish, about one or two pounds in size, though I couldn't work up much enthusiasm for them. I had a lot of fun with an assortment of barely pan-size sunfish which seemed to be absolutely addicted to my flyrod poppers. But the largemouth bass and crappie which hang around the Fairfax City dam are really the best reason for a fishing trip up there.

The dam is easily accessible along Route 7 and then south along Route 659 and turn right next to the water plant. For those who prefer the more secluded sections of the creek, a copy of the late Randy Carter's "Canoeing White Water River Guide" and a copy of the Virginia Department of Highways map for Loudoun County are necessary.

And don't forget to take along your Sunday best manners. That way, you won't be making the local folks mad at the rest of us who would like to fish and canoe along the Goose from time to time.



by BILL COCHRAN
Roanoke

Since doves have a way of working evolution in reverse--they can make a monkey out of a man--it pays to go afield after them with something more than a camouflaged cap and an inflated ego. For one thing, you'd best take plenty of shells.

More shot is tossed at doves than at anything else that flies, not to mention expletives. And how these sleek-winged characters can fly--fast, faster, super fast, erratic, twisting, tumbling, high, low, even slow, if that's what it takes to throw a hunter off target.

The idea is to lead them, then fire at the spot where the bird and shot collide. Since that sounds easy on paper but can be something else out there in a corn patch, hunters annually spend upward to \$16 million per year in this effort, and that's for shells alone. This makes the dove important in more ways than one, since 11 cents of every dollar spent on ammunition goes to

Deceptive Doves

the federally-operated Pittman-Robertson Fund. Money from this is kicked back to Virginia and other states for wildlife research, restoration and land purchases.

But it takes more than a crate of shells to make a successful dove hunt. A good game plan is to scout around several days before the season opens, in an effort to locate concentrations of doves. You can do this by driving rural roads, watching for recently harvested corn fields and searching for patches of lespedeza, millet, foxtail, pokeweed, wheat, sorghum, peas, peanuts, bull grass or anything else that is attracting doves. This is the actual hunting part of dove hunting. Once you locate a spot where doves are pitching in to feed or water, it is then a matter of shooting more than hunting. So the pre-season scouting can make the difference of whether you are shooting come opening day or merely counting butterflies.

The character of a dove, of course, is going to be considerably different during the pre-season period. You'll see them dozing along power lines, sleepily emitting peace-giving impressions and occasionally cooing at an approaching black cloud. Sometimes they'll be in the gravel at the edge of a roadside, even an urban street, picking grit and waddling about on short, stubby legs not made for serious walking. Drive by and they are no more fearful than city pigeons. They stare at you through black, beady eyes made of polished coal. You break and swerve your car to avoid hitting them.

Peaceful, innocent, deceptive, it is enough to make a non-hunter ask, "How could anyone shoot at a sweet, little ol' bird like that?"

Come opening day, you well know, you'll be out there in a camouflaged coat and all those "little ol' birds" will have dropped their symbol-of-peace masquerade and suddenly will have taken on hawk-like characteristics. It won't be a matter then of how could anyone shoot one. It is how in the world can anyone hit one? They will come sizzling across the field before you like missiles off a launching pad. They will leap and tumble in mid-air, offering you a five-ounce target about the size of a billiard ball, and flying through the sky at Lord-knows-what speed. Finally, they will leave you with a black and blue shoulder and a pile of empty shotgun shells gathered about your feet that cost you a hard day's wages.

In order to achieve that desired status symbol, a black and blue shoulder, your pre-season scouting should be done with the realization that just because a certain dove field was red hot last season, that's not a definite indication it will be the same this season. In fact, doves can be blackening the sky over a field one week before opening day, only to be gone when shooting time comes.

In the fall, driven by migration tendencies, doves begin to gang up. They appear restless at times, moving from spot to spot as food becomes available to them. Often, they'll settle on a particular field as a feeding grounds, and that's where you'll want to be opening day.

You locate this field by hunting--without a gun--several days prior to opening day. You gain permission to hunt it from the landowner. You check it out a couple days before the season begins, just to make certain the doves haven't changed their daily habits. You're all set.

Now only one thing can go wrong, and that may very well happen. A cold front can move in, and unseasonable weather, bringing dropping temperatures, frigid rains or frost, can send your birds burning the wind on southward. Deceptive!

But let's say--let's hope, anyway--that this doesn't happen. Let's say opening day comes and the concentrations of doves you've pinpointed remain exactly where you want them. It will be a piece of cake.

Only, don't expect to have them all to yourself, any more than you'll have a trout stream all to yourself the first Saturday in April. Dove hunting has rapidly grown in popularity the past decade. Now opening day holds many of the gregarious and social traits, the good and the bad, as does the first day of trout fishing season. In

other words, you aren't likely to be hungering for companionship.

Now while this wouldn't do if you were after grouse, quail or turkey, it isn't all bad for dove hunting. Often it takes several shooters in a large field to keep the doves flying, and thus offering you targets. Otherwise, the birds will settle at the far end of the field and feed there. You go down to that end, and they'll flush and fly to the area you just left. This can go on all afternoon. So teamwork, something of the same kind that goes to make up a successful deer drive, is a necessary ingredient.

If you want to be top gun among your team members, and who doesn't, some skill is involved in being at the right spot at the right time. Every field has its one or two best shooting positions, and this is where you'll want to be. To find them, you must size up the field with something of the same kind of dedication used by a golfer to read a green. Look for the corridors that the doves use in their approach. Select a depression in a hill, a tree along a fencerow, a piece of high ground by which birds are moving. Wear drab or camouflage clothing. Use the available cover to break up your outline. Sit still, but be flexible. Be ready to move to another spot to take advantage of the best shooting opportunities.

It is not a bad idea to have an alternate field or two available, should the first you select prove to be a dud. This is especially true after opening day. Be aware that a couple days of heavy gunning can burn a good field out, sending the birds to less hazardous places to feed.

Fortunately, good hunting spots are available to the gunner willing to work for them. Doves appear to have benefited from modern farming methods, and then, too, some of the best shoots are often found within the shadow of urban areas. Here, where upland birds such as quail and grouse move away from human activities, doves appear to prosper. One of the finest shoots reported last year was at a county drive-in movie theater where droves of doves were pitching in to eat discarded popcorn. Not since the golden era of Hopalong Cassidy and Roy Rogers had as much shooting erupted out of this theater!

Unfortunately, some of the best dove fields in several areas have been closed to hunting because during past seasons slobs disguised as hunters came in to destroy crops, to litter, to allow their shot to fall on buildings and to shoot well over the limit, never bothering to pick up the birds they downed. Like all hunting, continued good dove shooting is dependent upon proper sportsmanship, and it is high time every dove hunter realized this.

Since we've covered everything about dove hunting from locating a productive field to sportsmanship, this leaves but one item. How to hit them. Alas, we are still working on this matter ourselves. Thus, it must be left to another article some time in the future.

Camouflaged and partially hidden, a hunter eagerly awaits the doves.

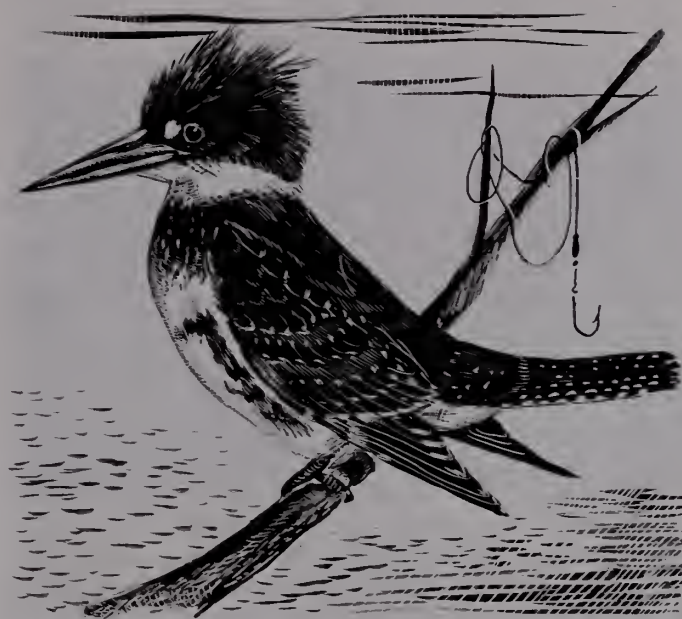


of caddis flies kingfishers and trout

By PAUL H. BRATTON, JR.
Deerfield

The opening of the trout season in Virginia's mountains isn't marked on most calendars though the fisherman looks forward to it with more anticipation than a dozen Washington's Birthdays. Designated as the first Saturday in April by the Virginia Commission of Game and Inland Fisheries, it is marked by the white blossoms of bloodroot and serviceberry.

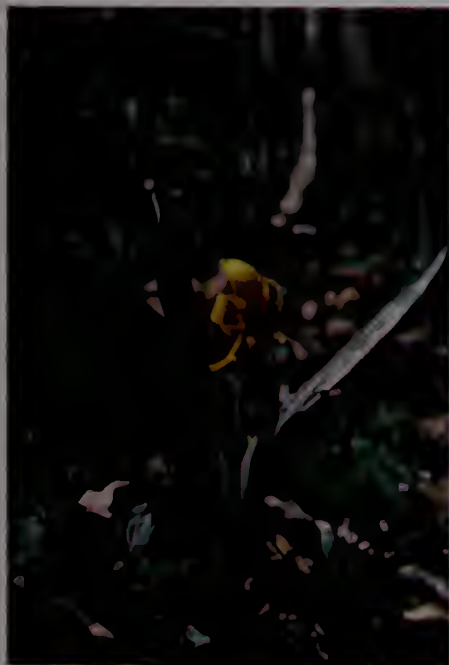
Jim Malcolm, my brother David, and I began preparing for opening day weeks beforehand. We planned



to fish one of the clear mountain streams in western Virginia, a few miles below the section that is well stocked with both trout and fishermen. Some native trout can be found in the stream along with the stocked trout dispersed from upstream. The chance for a native trout makes the fishing more interesting and the stocked trout make it more productive.

Arriving at the stream early on opening day with a car full of waders, bags of hooks and lures, and various rods and reels, we selected and compared tackle before starting upstream. The stream was swollen from the spring rains and occasional gusts of wind swept

The trout lily blooms in both sun and shade. The excitement is always there, whether it is your first or your thousandth trout.



between the ridges. Pools and rapids that are shaded later in the summer were lit by the sunlight streaming through the still bare trees.

First we headed for a small feeder stream to search for the three-inch conglomerations of twigs and leaves that form the case of the caddis fly's larva.

The caddis larva spends most of its life in a home constructed from material found in the stream bed. Those larva living in swifter water often use pebbles and sand for ballast, while those in gentler currents might use twigs and leaves. The caddis glues these materials into the form of a slightly tapered funnel with its head at the larger end and its body entirely enclosed in the case. The cases are numerous in most trout streams and the trout often swallow the entire caddis case, leaving the job of separating the larva from the debris to its digestive tract.

There are many mysteries in every trout stream and the caddis fly is one of them. Although each of the case-building species constructs a unique case, even experts aren't always sure which flies hatch from which larva. Great numbers of the moth-like caddis flies hatch and swarm in erratic flight over Virginia's river and streams.

Sometimes called "periwinkles" by local fishermen, the caddis is peeled from its case and threaded on a small hook. It is especially effective when used in the rapids of streams.

We each quickly gathered a handful of cases, storing them unopened in a pocket until needed. With the caddis cases added to our supply of worms, salmon eggs, spinners, and flies we carried enough bait and lures to last a month, bowing to that fanatical fisherman in each of us that is always ready to carry one more lure "just in case."

Moving into the stream as the opening time arrived at noon, I found the high water had converted the gentle

currents to rapids, threatening to sweep my feet out from under me. Small mayflies were rising over the smoother sections of water and a kingfisher darted upstream with a rattling cry, protesting the invasion of his fishing territory.

Only the kingfisher and I shared the visible section of the stream. Our fishing was not competitive; he was after the smaller fish and I the larger. His loud cries seemed to be boasts over my many fruitless casts and retrieves compared to his infrequent dives that always produced a meal.

After several casts had produced no strikes, I relaxed and enjoyed the contrast of bloodroot blooming on the sunny banks and the cool shade at the shale cliffs where ferns and hemlocks grow. The trout lily bloomed in both the sun and shade, its mottled green and brown leaves suggesting the colors of a trout in a clear pool.

It is good to hold the spinning rod at the season's opening, feeling the quiver as the current caresses the line and tugs at the spinner. I probed behind rocks and into familiar pools, occasionally placing a cast into overhanging branches during a gust of wind.

Finally at the foot of a small rapids I felt the line come alive as a trout struck my lure. The feel is unmistakable and I slowly guided the trout to me letting him spend his energies against the action of the feather-weight rod. The excitement is always there whether it is the first or thousandth trout.

Lifting the trout from the water is like holding a concentration of the stream's spirit. The mottled green of the trout's back reflects the streamside vegetation and the speckled sides reflect the sparkling water and rocky streambottom. Killed and creoled the trout soon loses its glittering reflections. As good as trout are in the skillet, they are even better in the stream so I release most trout I catch. I keep only enough for an occasional meal to maintain the ties between the trout and myself, reserving my place in the food chain of the stream.

The high waters had caused the trout to seek the protection of the deeper pools so my companions and I soon concentrated on these spots. David found a perch on a high bank above a log jam. With nine split shot on his line he was able to reach a small whirlpool where several trout had congregated. His techniques were those of an ice-fisherman, using a short rod to yank the trout from the pool, but his results were good.

Jim and I were slightly less successful using more conventional methods, but we each landed enough trout to consider the day a success.

Soon the chill of an early spring evening descended on the stream as the ridges blocked the sun's warmth. Returning to the car we removed waterlogged waders and cleaned our catch. With a wood stove and warm cabin to banish the chill, the excitement of the day's fishing gave way to a peaceful night recounting the day's events and planning for future fishing trips.

The bloodroot blooms, shaded by ferns and hemlocks.



How Many Rabbits?

By ROBERT J. WARREN
Blacksburg

The cottontail rabbit is often considered to be America's No. 1 small game mammal. Both for young hunters out for the first time and seasoned, experienced hunters, the thrill of bagging a rabbit on the run is never lost. Yet, many hunters know little of the factors which determine the survival of rabbit populations. The cottontail is subjected to many environmental pressures which annually result in a population turnover rate of over 85%. In other words, approximately 15% of the rabbits alive this year will be alive next year. The cottontail surmounts these extreme environmental pressures by possessing exceptional reproductive capabilities.

The rabbit usually comes to mind first when one thinks of an animal capable of multiplying very rapidly. Cottontails begin to breed about mid-February. With an average gestation period of 28 days, the first litters are then born about mid-March. Almost immediately after giving birth the female will again mate. Thus, the female is constantly pregnant throughout the entire breeding season which lasts until about mid-August. Litter sizes for the cottontail usually average between three and five, although as many as twelve have been recorded in extreme cases. Females will usually have about five litters a year, but as many as seven or eight have been reported.

In addition to being very productive, the cottontail begins to "produce" at a very young age. Breeding by juvenile rabbits three to six months old) contributes greatly to the rabbit population. It has been reported that 12 to 23% of the total crop of rabbits produced annually is contributed by juvenile breeding.

Thus, it is quite obvious that reproduction is the primary "weapon" that the cottontail uses in fighting the "war for survival." Its exceptional reproductive capability enables the rabbit to overcome many mortality factors, while still providing much enjoyment to Virginia's hunters. It may sound strange, but the cottontail is actually adapted to these high rates of mortality, and without them would probably not survive as well. It would not take long in the absence of such mortality for the rabbit population to overuse the resources in its environment, known as the carrying capacity. If the cottontail were to exceed the carrying capacity of its habitat, many individuals would weaken and likely die due to disease, predation, etc.

Much research is being conducted at Cooperative Wildlife Research Units across the United States to investigate the reproductive performance of many wildlife species under different conditions as might be



imposed in their natural habitats. Work currently underway at the Virginia Polytechnic Institute and State University Cooperative Wildlife Research Unit is designed to determine the reproductive success of cottontail rabbits under conditions of nutritional restriction and after exposure to the insecticide Mirex.

Many problems are encountered in conducting research with the rabbit and, for that matter, any wildlife species. Our work at V.P.I. & S.U. requires that cottontails be maintained in captivity in order that the conditions to which they are exposed may be controlled. Some rabbits do not adjust to these captive conditions and die. Furthermore, rabbits must participate in an elaborate mating or copulatory chase before breeding occurs. To allow for this behavior, the rabbits on experiment must be transported to several quarter-acre outdoor penned enclosures located in a woodlot near Virginia Tech. Rabbits are sometimes lost to predators while they are in the outdoor pens. Other researchers working with laboratory animals do not have to be concerned with problems of this nature. However, these problems must be dealt with by wildlife scientists in order to determine precisely how wildlife species respond to different environmental conditions. Knowledge of this nature allows better decisions to be made concerning the management of wildlife populations. Research could be conducted on laboratory animals and this information could then be extrapolated to wildlife species, but this information would not be nearly as valuable as that gathered from the wild animal itself. Cooperative Wildlife Research Units all over the United States are engaged in research which ultimately should enable better management and conservation of America's wildlife resources. Specifically, our research with the cottontail rabbit at V.P.I. & S.U. will hopefully provide wildlife biologists information that will enable better management of rabbit populations and may possibly explain why rabbit populations are so low in certain areas.

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Bird of the Month:



By JOHN W. TAYLOR
Edgewater, Maryland

The Blue-Gray Gnatcatcher

The natural range of the blue-gray gnatcatcher presents another of those unexplainable puzzles that so confound the study of bird distribution. The gnatcatchers are among the two American representatives of an old world family, the *Sylviidae*, a large group (400 species) found almost exclusively in Europe and Asia.

Why and how did this one small genus colonize North and South America while none others of its family has done so? (The other American *Sylviidae*, the kinglets are found in the old world as well) No explanation has been advanced, save the possibility that taxonomists have placed the gnatcatchers in the wrong family.

Only slight differences separate the eight species of gnatcatchers, which range from the northern U.S. through Central and South America through Argentina. All are, like the blue-gray, tiny, restless mites clad in soft grays and whites. Our species has a dark stripe over the eye and white outer tail feathers.

In these latitudes, they are known best as birds of the springtime. Arriving early, when the first leaves are just unfolding, they bring new life to the winter-weary woods, and are readily noticed. Their whining, almost

catlike notes, carried on the fresh April breeze, are among the typical sounds of the season. Later, when the foliage is full, and bird song is rampant, they seem to disappear, though they stay with us all summer.

In early May, pair bonds are formed and nesting begins soon after. During construction of the nest, the birds call constantly to each other, a soft murmuring stream of melody, hardly audible at ten yards.

It was just such a performance by a pair of gnatcatchers that first stimulated this writer's life-long interest in birds. The nest itself, dramatically situated high in a locust on a slope overlooking the Shenandoah River, was later collected. Delicate and compact, with an outer covering of lichens, it was much like that of the hummingbird. Used in its construction were petals from the locust blossoms nearby, thus imparting a fragile, fairy-like beauty to the structure. The inner portion was woven from the softest of plant down and fiber.

Gnatcatchers begin the southward trek early. Few are seen after August. Some go all the way to the tropics, but many remain in the southern and gulf states. They winter regularly in Florida, often frequenting feeders when soft foods are available. Smaller numbers linger in the Carolinas, and an occasional individual will brave the colder months north to Virginia and Maryland.



Edited by GAIL HACKMAN



GOOD SAMARITAN OF THE MONTH

"Twelve-year-old Chris Robinson of New Kent County, was clipping my pasture with a bush hog, when he noticed some unusual movement on the fence row. A pine limb hid the area almost completely. However, on his next round he again saw some movement. Chris stopped the tractor and found a half-grown deer caught in the fence. The animal was hanging by its back leg--its ankle caught in the top of the fence.

Chris ran to the stable and told me about the deer. Together, we freed the animal--saving its life and avoiding many more hours of suffering for the little doe.

Sincerely,
Chapman L. Harrison.

Congratulations Chris! Your quick thinking and efforts to help a wild creature receive our sincere thanks.

JUST DUCKY

I have a pair of mallards I got as a gift. They have nested and layed an exceptionally large clutch of 16 eggs. I was wondering if any reader's mallards have layed that many eggs.

Patrick Nuckolls
Galax, Virginia



SOMEWHERE OUT IN THE ATLANTIC...

A sea turtle, like the one pictured here, has been banded "Virginia Wildlife," and sent out to sea. As part of the Island Resources Foundation, Inc. project to study the rapidly vanishing Atlantic Green Sea Turtle, the Youth Afield editor has adopted one of the reptiles, and should be receiving information on its progress in the future. The name "Virginia Wildlife" has been given to

the turtle as the result of letters from "Youth Afield" readers. "Virginia Wildlife" our turtle, is only one of many adopted by groups and individuals, who want to see the species return to its former numbers.

POPPERFLY PRIZE

Andrew Kress of Falls Church, caught this one-pound bluegill at Carolyn Furnace Camp Lake. The eight-year-old landed this beauty while using a popperfly.



LOVE THAT BOBCAT

"I've read a lot of issues of Virginia Wildlife. I've seen deer, bear fish and turkeys. But I have never seen a bobcat, so enclosed is a picture of my bobcat I killed when I was sixteen."

Robbie Collins
Alexandria, Virginia



Notes from Moccasin Hill

By DEANE DOZIER
Waynesboro

How many times have I dreamed of a home in the woods? A comfortable cottage . . . a cottage with a porch overlooking a lake . . . a cottage with smoke coming out of the chimney to welcome us home. How many times have I said, "Someday we'll have a place where there's peace, a place away from the noisy congested city, a place where we can sit together at the end of the day and watch the evening fold around us."

I was relegated to being a dreamer. In my mind, it was only a "someday" thing. So it caught me completely off guard. Emotionally unprepared. The inauspicious classified ad gave no inkling of what lay behind it. Two words, "mountain cottage," were the hookers. And suddenly, in fact abruptly, there it was--our mountain home.

I don't think I breathed when I first saw it, tucked in a hollow at the foot of a hill; breathing would make the reality of the dream hit too forcefully. In my thoughts, I stood back and away, with all the stored-up notions and hopes beginning to sift out of some cobwebbed closet of my brain.

There was the wide front porch where we'd set out chairs (keeping that beat-up rocker already there, of course); the place we'd sit in summer evenings, looking out over the lake.

The lake. It was there, too. Emptied now--something to do with a faulty valve in the overflow system--but a lake with a past of fantastic bass fishing and a future with fantastic promise. A feeder stream, reputed to hold native trout (a fact of no small consequence to my husband) made its winding way into the lake.

The span between the two pines in the front yard would be just right for the rope hammock stashed beneath the ping-pong table in mother's basement for three years. Lots of shade trees would keep the yard cool on even the hottest summer days, and would offer tempting hickory nuts and silver maple seeds for the squirrels that would come to live here.

The dreams, the hopes, many of them so dusty as to be almost forgotten, continued to filter by in real life.

Blackberry bushes that would give fruit for blackberry cobbler were everywhere.

An indigo bunting darted across the yard, his incredible iridescent blue flashing in the sun in striking contrast to the yellow and black of the goldfinches out where the former lake had given in to weeds.

Young chipping sparrows that seemed to be all fluff

and down followed their slimmer parents about in the grass, begging for a free handout, and I couldn't wait to hang up my feeder a friend had fashioned from a hollowed log. The feeder would hang from the porch so we could watch from the window seat we'd build inside the wide front window.

The window . . . of course. There was the big window I always knew we would have someday, with lots of panes to give it country charm.

Inside was a long living room with plenty of wall space for the shelves and shelves of books we'd collect, and with room left for my favorite paintings. Our desks and file cabinets would occupy one end of the room, positioned so that we could look out on the lake as we worked at our writing.

At the other end of the room was a monster of a fireplace that would burn logs big enough to tax Paul Bunyan.

Another large candle would hang on its rawhide straps from an overhead beam. The room would often be filled with music from the great symphonies, but even the composers of the classics would be hard put to match the music inherent in the still of a mountain snow, or the music of a breezy, bee-buzzing July at midday.

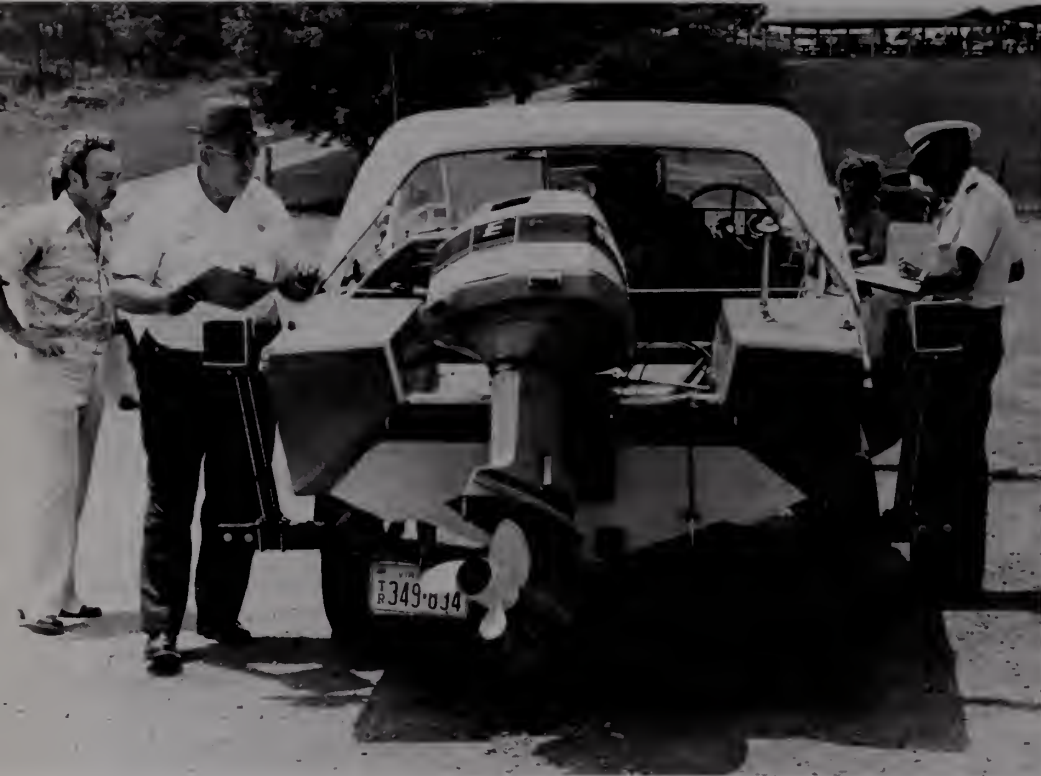
In the big kitchen--could it have been otherwise?--was a long table with red-and-white checkered tablecloth and ladderback chairs.

We had come just ten miles from Waynesboro and another two miles up into the Blue Ridge mountains to find this place. No city traffic. No factory smoke. The reality of it all boggled my mind. The dream had materialized. It was real. But it was incomprehensible. We can take it in stride when the small hopes and dreams come true, the day-to-day achievements. It's the fulfillment of the really big ones that catches us off balance. This was one of the big ones.

Now. How do I wait for the first snowfall? Where do I find time to explore the abandoned jeep trails that lead off in every direction? How do I wait to gather sassafras for sassafras tea, and how do I wait to find the moccasin flower, or lady's-slipper which gave the hill behind the house its name? But why wait? Why not just take off right now? I hear there are patches of running cedar in these mountains. It would be nice to know where they are when Christmas comes. Wanta come along?

ON THE WATERFRONT

Edited by JIM KERRICK



Boat Inspection — State wildlife officials and members of the U.S. Coast Guard Auxiliary inspected 258 boats at South Holston Reservoir. Here officials look over a boat owned by Harold Leonard, St. Paul, Virginia. Left to right: Commissioner Louis Milhorn of the Tennessee Wildlife Resources Agency, Captain Jim Kerrick, Safety Officer from the Richmond Headquarters of the Virginia Game Commission and Commander Williams from Bristol Flotilla 12-7 of the U.S. Coast Guard Auxiliary.

BOAT SAFETY CHECKS — ARE THEY WORTH IT?

The answer is definitely YES. For the last two years the Greater Bristol area Safety Council has sponsored Boating Safety Inspections at South Holston Reservoir. Wildlife Resources Agency officers from Tennessee and Virginia Commission of Game and Inland Fisheries wardens along with United States Coast Guard Auxiliary, Division 12, Bristol Flotilla 12-7 have worked together conducting boat safety checks to determine if the requirements of Federal Boat Safety Act of 1971 are met. All boats propelled by machinery must have a valid certificate of number on board anytime

the boat is underway. The boat registration number must be displayed on the forward part of the vessel on the port and starboard sides. There must be a U. S. Coast Guard approved personal flotation device on board for each person, plus if the boat is 16 feet and over there must be a throwable device. If the boat is an inboard, inboard-outboard or if there are spaces on the boat where gasoline fumes may accumulate, there must be a fire-extinguisher on board. Plus the boat must be properly ventilated. All inboard engines must be equipped with a flame arrestor. Red and green bow lights and white anchor light must be operational if operated between sunset and sunrise. Each

boat must be equipped with a horn or whistle which can be mouth or power operated. Equipment requirements vary with the size of the boat.

The Coast Guard Auxiliary requires in addition to the required equipment, a paddle or oar, first aid kit, bailing device, flares, tool kit, anchor and line, flashlight and compass in order to be awarded a courtesy decal.

The annual inspection on June 27, 1976 at South Holston was a complete success with 258 boats being inspected by state wildlife officials and federal officials. This is a record for Virginia and could possibly be a national record.

Why was this venture a success?

Because industrial groups, concerned citizens, state and federal authorities worked hand in hand, side by side, in promoting boating safety and making many boating enthusiasts aware of their responsibilities on the water.

On July 11, 1976, The Virginia Commission of Game and Inland Fisheries and personnel from Division 12, Bristol Flotilla 12-7, Coast Guard Auxiliary inspected boats at John Flanagan Reservoir, Haysi, Virginia. Here again the venture was a complete success.

Wallace Coffey, Outdoor Editor, Bristol Herald Courier, the Greater Bristol area Safety Council; Ernest S. Yeatts, Game Warden Supervisor and Game Wardens from the Daniel Boone District, Virginia Commission of Game and Inland Fisheries; personnel from Division 12, Bristol Flotilla 12-7, Coast Guard Auxiliary; Tennessee Wildlife Resources agency officers; local Rescue Squads and WCYB-TV are to be commended for their efforts in promoting boating safety in Virginia and Tennessee. YES, boat safety checks are worth it.

The September Sunfish



By PETE ELKINS
Lexington

September is a month of transition for Virginia game fish. Nights cool with the promising nip of October. Leaves begin to change in preparation for the fall color festival.

The best of Autumn's fishing isn't quite here yet, but it's just around the corner. For river anglers on the James, Rappahannock, New, Maury, and many other Virginia waterways, September is the month for sunfish.

Smallmouth are not quite ready for the October rampage, and the next best thing is the chunky sunfish. September is their month, with its gray-white, river-cooling misty mornings.

In the shifting mist the sunfish wait for virtually anything eatable. I recall numerous early Autumn float trips on the James when eager redbreasts salvaged a day when the smallmouth were displaying their fickle side.

Already, a few leaves were scattered on the water, and beginning to collect in eddies and pockets along the shore.

The leaves were signposts to the redbreast which also preferred the same quiet areas. Each time we cast a small beetle-spin or Mepps close to the leaves, the results were the same: a hard, thumping strike, followed by a fast, circling sprint against the rod, circles narrowing as the fish neared the boat, then a series of sharp dives just before the redbreast surrendered.

Sunfish are good eating. This haul will make a tasty meal.

As autumn cools the air, the sunfish comes into its own as a game fish.

Soon, the stringer was alive with emerald backs, blue-lines, cheeks, and orange breasts. Redbreast sunfish, or more accurately *Lepomis auritus*, share the limelight with rock bass, *Ambloplites rupestris*, as Virginia's most popular river and stream panfish. Of the two, the redbreast is the tougher on a rod, but the rock bass or "redeye" has other redeeming qualities.

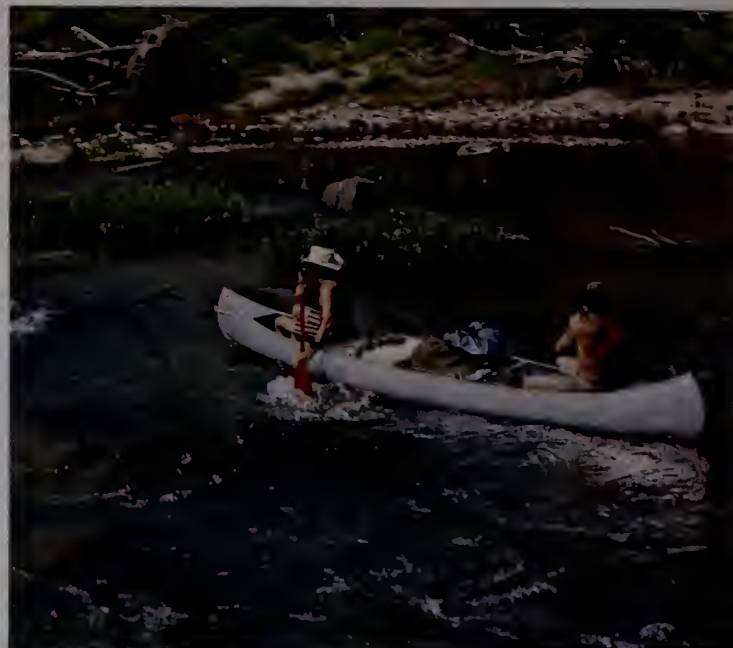
If fish can be judged by the company they keep, the redbreast must be rated high, for this colorful sunfish is at its best in classic smallmouth water, where swirling pools alternate with gravel riffles, and overhanging trees shade still, deep waters along the inside shoreline below a bend.

Fortunately for fishermen, the redbreast is far less discriminating in lure selection than in choice of finny companions. There are few lures that an aroused redbreast will not assault. I've seen redbreast attack a large plug, thrice their size, intended for a James River muskellunge.

But, as a general rule, smaller lures produce much more consistent results. Proven lures include 1/8 and 1/16-oz. beetle-spins, particularly chartreuse and white editions; 0 and No. 1 Mepps; small flatfish; and Tiny Torpedo surface lures. These lures are all perfectly matched to light spinning tackle.

Tackle manufacturers must have had redbreasts in mind when they produced ultra-light spinning tackle. A four to five-foot wisp of a rod, two or four-pound mono, and a tiny reel are guaranteed to bring out the best in a redbreast.





A fisherman prepares a dinner to complement the day's sunfish catch. For river anglers, September is the month for sunfish.

The ultra-light rig atones for the sole drawback of river panfish: small size. A one-pound redbreast would be a trophy. Most run closer to one-half or less than that. But on the ultra-light stuff, redbreast are exciting scrappers.

Even though the fight may be magnified more on ultra-light spinning tackle, fly fishing is perfectly adapted to redbreasts. The few scientific studies of redbreast reveal that insects are their dietary mainstay. Fly fishermen, take note. These sunfish are talking your language.

Fly fishermen who are entranced with the "match the hatch" game can experiment happily wherever the redbreast is found. For simple sorts like me, a big No. 6 or No. 4 nymph, looking sufficiently juicy and "buggy" seems to do fine. A Montana pattern is a good all around nymph choice. Reasonably light tippets make the presentation and underwater action of the nymph much more effective. Three-pound test, or something in the 4X to 5X range will suffice, yet provide a degree of protection against intruding smallmouth.

Small popping bugs, sponge spiders, big dry flies and hair bugs are avidly taken by surface-feeding redbreast. Usually, the redbreast prefers his surface offerings on the docile side. An occasional twitch is about all that it takes. Most strikes occur when the lure is sprawling motionlessly on the surface.

As with smallmouth, the most enjoyable way to use the long rod for redbreasts is to anchor your boat, and wade productive stretches so that you can concentrate on the satisfaction of fly casting and the subsequent battle with the redbreasts.

If the redbreast is a battler every inch of the way, the rock bass is a belligerent bully. This redeyed, mottled gangster of the river streets hangs around dark crevices under rocks, weedy shallow areas, and in deep pools where granite cliffs climb high into the world of predatory hawks.

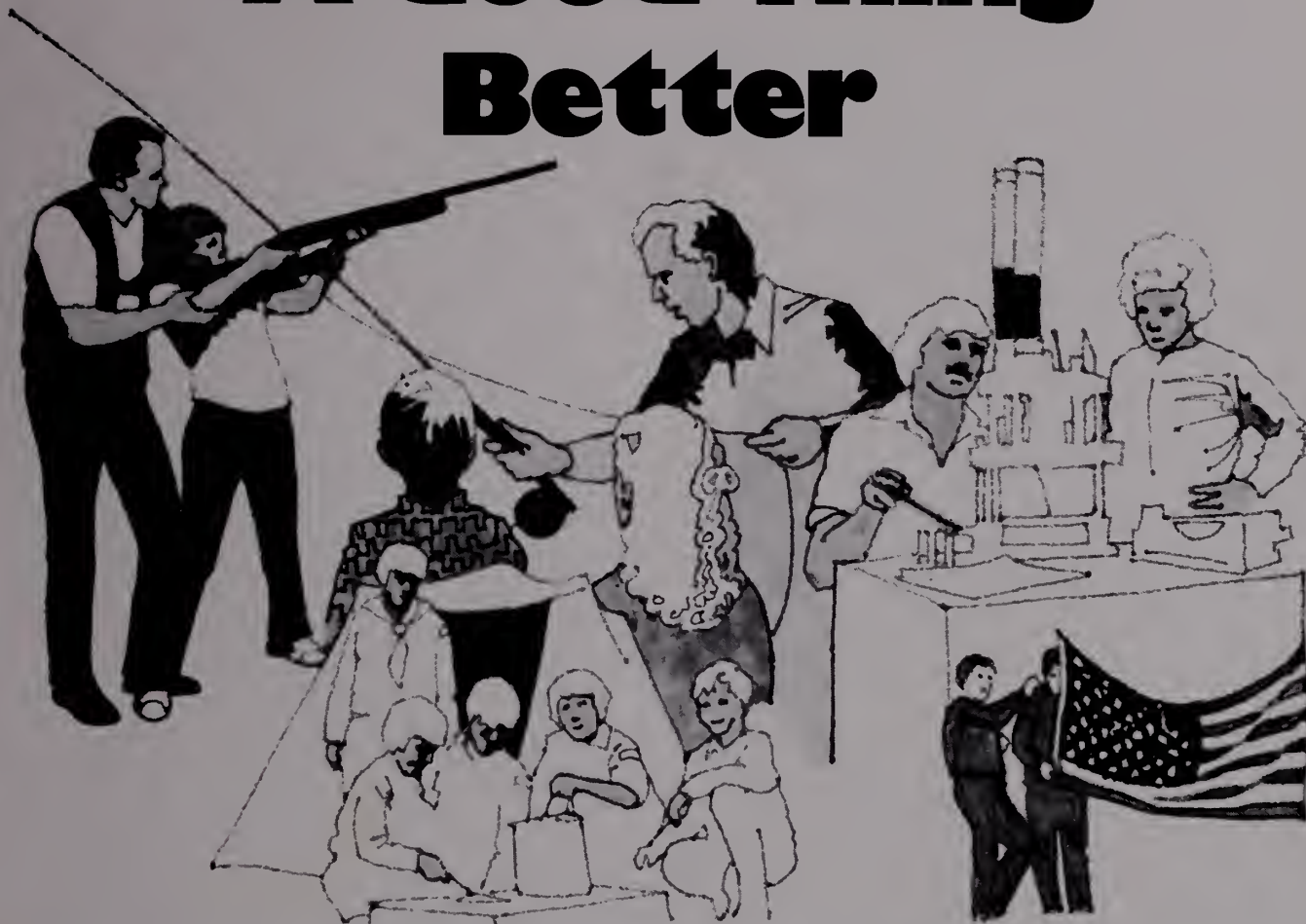
Although not as numerous as redbreasts in big rivers like the James or Rappahannock, the rock bass thrive in smaller waters like the Maury and Cowpasture Rivers. Like the redbreast, the redeye shows a commendable preference for rubbing shoulders with *Micropterus*, the smallmouth. However, rock bass can survive in more turbid waters than smallmouth prefer. Most of Virginia's really big rock bass come from the Pigg River, not exactly picture-book smallmouth habitat.

If anything, the rockbass is even more enthusiastic about stuffing its gullet than is the redbreast. However, the rock bass's larger mouth makes it a bit more attuned to preying on smaller fish as well as aquatic insects.

Sunfish are delicious panfish. The average size makes preparation a bit tedious, yet the results are well worth the extra effort. I like to fillet the fish, using a very sharp, thin, flexible blade. Then, placing the fillet skin-side down, a quick slide of the blade between skin and fillet produces a slab of pure white goodness.

There are many good recipes available for preparing sunfish, any of which are perfectly adaptable to redbreasts and rock bass. I highly recommend fellow Virginian Joan Cone's excellent brochure *How To Cook Fresh Water Fish*." This is available by writing Mrs. Joan Cone, P.O. Box 242, Williamsburg, Virginia 23185.

Making A Good Thing Better



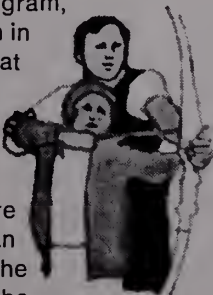
National Hunting and Fishing Day September 25, 1976

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FOR ESSAYS, DRAWINGS OR PHOTOGRAPHS OF **BIRDS OF VIRGINIA**

RULES:

CONTEST PERIOD: September 15 - December 31, 1976. Requests for entry forms must be no later than November 15, 1976. ELIGIBILITY: All students in Virginia schools, grades 5-12. TO ENTER: Submit entry through a participating school, or send for an entry blank as an individual. Include in request a card showing: County, City, School and school address, Grade, your name and home address. SEND TO: Conservation Education Committee, P. O. Box 366, Centreville, VA 22020.

ESSAYS

1. Essays should not exceed 750 words.
2. Essays must be limited to birds native to Virginia.
3. Essays will be judged on the basis of originality, effort, grammar, and grasp of the subject.

DRAWINGS

1. Drawings should be no more than 8 1/2" X 11" for ease in sending to judges. Should be on no more than one specie of bird.
2. Drawing may be done in charcoal, pen and ink, water colors or oils. No tracing will be permitted. Such entries will be immediately disqualified by judges.
3. Attached to drawing must be identification of bird(s) and brief description of its habits.
4. Drawings will be judged on the basis of likeness, effort in drawing and originality.

PHOTOGRAPHS

1. Photos must have been taken by contestant. Photos submitted must be taken during contest period to be eligible.
2. Material submitted can be either in black and white or color and must be a print. No slides allowed.
3. Attached to drawing must be an identification of the birds and brief description of their habits. Participant must include exposure data, location and type of film and lens used.
4. Photos will be judged on originality, technical excellence, effort and expression.

PRIZES:

Top winner in each grade for drawings, photographs, and essays will receive a \$100.00 savings bond. Second prize winners will receive a \$50.00 savings bond. Special mention prizes of \$5.00 each will be divided among eligible grades in proportion to response. Top prize winners will be considered for a publication in an issue of Virginia Wildlife Magazine.



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